

# The impact of job crafting intervention on nurses' career competencies

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## ABSTRACT

**Background:** Job crafting is widely recognized as a proactive practice that empowers nurses to redefine their roles, strengthen career competencies, and accomplish professional objectives. This process contributes to both organizational effectiveness and a more meaningful, satisfying work experience for nursing professionals. **The aim** of the present study was to assess the impact of job crafting intervention on nurses' job crafting behaviors and career competencies. **Design:** A quasi-experimental design was used to conduct the present study. **Setting:** the study was conducted at Zagazig University Hospital, Alsharqia, Egypt. **Subject:** The sample consisted of 310 nurses, equally divided into two groups: study (intervention) and control. **Tools:** Four tools were used for data collection; job crafting knowledge questionnaire, job crafting scale, general skills checklist, and the career competencies scale. **Results** Nurses' knowledge of job crafting significantly increased in a study group, reaching 70% immediately post-program and 76% at three months follow-up. Additionally, 83.2% displayed good job crafting skills, while 40.6% and 41.3% exhibited high job crafting behaviors immediately and three months after the program, respectively. Improvements in career competencies were noted, with 44.5% immediately and 51% three months after program implementation. **Conclusion:** The job crafting intervention program led to statistically significant improvements in nurses' knowledge, skills about job crafting, and career competencies. These improvements were sustained three months after program implementation, favoring the study group compared to the control group. **Recommendation:** Hospital administrators should foster and normalize job crafting as a constructive approach that enhances individual performance and strengthens organizational effectiveness, and integrate job crafting practices into professional development programs for nurses

**Keywords:** Job Crafting; Career competencies; Intervention Program; Nurses

## INTRODUCTION

Nurses work in high-pressure environments that demand quick and effective responses to unpredictable challenges. In addition to having extensive professional expertise and clinical skills, they require strong team leadership and organizational support. The COVID-19 pandemic highlighted the necessity for nurses to manage extensive medical and public health tasks amidst complex and stressful circumstances, including increased work pressure, communication challenges, psychological stress, and burnout. This situation has compelled nurses to frequently adapt and enhance their professional skills, work procedures, and management systems while also engaging in additional roles (Li et al., 2024).

Moreover, as diseases grow more complex and technology advances quickly, the nature of nursing work is evolving, introducing new challenges and requirements. Traditionally, employees within human resource management systems were expected to follow a stepwise approach. However, recent research advocates for job changes that reflect current workplace realities (Wang et al., 2024).

Healthcare organizations have generally employed a top-down approach to job redesign, wherein managers dictate job tasks and the required authority for nurses. This approach has proven ineffective, failing to satisfy nurses or enhance performance, as their input primarily serves to inform supervisors of job characteristics pertinent to management's redesign initiatives. Consequently, healthcare organizations are starting to integrate job redesign methods initiated by nurses themselves (bottom-up approach) alongside those prescribed by management (Abd El Rahman et al., 2023).

Job crafting interventions involve interveners who direct nurses to redesign their work to a certain extent in order to make the nurses' behaviors consistent with their strengths, motivation, and organizational goals to improve individuals and organizations' performance. Job crafting intervention embodies the practical value of job crafting, and the concept has been popular in recent years. Researchers showed that job-crafting intervention contributed to improving subjective well-being and job performance. At present, intervention methods mainly include job crafting training, job crafting exercises, use of the job demand and resource model, and personal development crafting intervention (Xizhou Tian et al., 2022).

Mohamed et al. (2024) underline that job crafting is increasingly recognized as a proactive organizational behavior that leads to numerous positive outcomes for both healthcare organizations and nursing professionals. Overall, job crafting aids nurses in adapting their roles to enhance career competencies and effectively meet their work objectives, fostering a more satisfying and meaningful work experience.

Moreover, Job crafting is an effective strategy for managing work challenges that enables nurses to reduce oppressive job expectations and achieve tough work objectives. The capacity of nurses to adjust their responsibilities or other aspects of their work environment on their own initiative is an important component of job-creating behaviors. This change in the work's purpose or identity frequently leads to improved job performance, career competencies, and productivity (Hussien & Ali, 2023).

Career competencies refer to the key information, skills, and abilities needed for individuals to advance in their career. These talents differ from job-specific skills, which may be acquired over time. In today's competitive job market, career competencies are essential for personal and professional growth. Nurses, in particular, must emphasize the development of both job-specific skills and wider professional competencies to maintain career longevity. This comprehensive approach to training and development matches with the demands of developing professional landscapes and promotes long-term career success (Adegbite & Hoole, 2024).

Career competencies represent essential personal resources that enhance individuals' resilience to stress and improve their employability. They can be categorized into three main types: reflective competencies, which pertain to an individual's awareness of their career motivations and attributes; communicative competencies, which focus on optimizing communication to boost career success; and behavioral competencies, which involve active engagement in exploring career opportunities, strategic planning, and achieving career objectives. These dimensions are often researched collectively as part of a comprehensive framework for understanding career competencies (Tamontseva & Akkermans, 2024).

Furthermore, career competencies are linked to improved relationships with supervisors and colleagues, contribute to work-home enrichment, and are essential for achieving career success. They bolster employability, enhance career adaptability, promote career autonomy, and help mitigate feelings of career insecurity. Overall, the role of career competencies is critical in fostering both individual and organizational success in the modern workplace (Talluri et al., 2024).

The research on job crafting predominantly focuses on employees within the healthcare sector, which includes a variety of roles such as nurses, dentists, and physicians. While findings may not apply universally across all occupations, certain features are unique to healthcare jobs. Professionals in this field rely heavily on social support from colleagues, patients, and organizational structures due to the emotionally taxing nature of their work, often exacerbated by inadequate infrastructure, limited decision-making authority, and lack of personal recognition. This environment needs close collaboration and joint decision-making, especially when faced with extreme time pressures (Renkema et al., 2023).

Additionally, healthcare personnel usually experience limited control over their tasks and schedules, which leads to extra strain and emotional fatigue. Despite these challenges, many workers find their job important and view it as a calling, indicating that their roles possess significant intrinsic value (Demerouti, Peeters, & van den Heuvel, 2024). Therefore, our study aimed to assess the impact of job crafting intervention on nurses' job crafting behaviors and career competencies.

## Research hypothesis

- Nurses' knowledge and skills about job-crafting behaviors will be improved after implementation of a training program about job crafting.
- The career competencies level of nurses will be improved after the implementation of a training program about job crafting.

## 1. Methods

### 1.1. Study Design

A quasi-experimental design (pre-posttest) was used to achieve the aim of the current study.

### 1.2. Study Setting

The study was conducted in eight teaching hospitals spread over two sectors of Zagazig University Hospitals (academic hospitals) in Egypt, which served as the study's site. The hospitals' combined bed capacity is roughly 2027 beds and 32 incubators.

### 1.3. Sample

Simple random sample (310) nurses from a total population of 4,030 nurses working in the above-mentioned setting. They were divided randomly into two equal groups: study and control groups. Each group has 155 nurses.

**Inclusion criteria:** Nurses who provide direct patient care, of both genders, have at least six months of experience in the nursing profession, and agree to participate in the study.

**Exclusion criteria:** Nurses who participated in a job crafting intervention program within the last 12 months, nurses who work in outpatient, and nurses who are working strictly in an administrative capacity.

1.4. **Tools of data collection:** Four tools were used to collect the necessary data.

**Tool I: Job Crafting Knowledge Questionnaire:** This tool was developed by the researcher based on related literature (Petrou et al., 2012; Bakker and Demerouti, 2014; and De Gennaro, 2019) and consisted of two parts as follows:

**Part one:** personal and work characteristics, to identify personal data of nurses such as age, gender, marital status, educational level, years of experience, department, hospital, and attending training courses about job crafting.

**Part two:** knowledge questionnaire sheet: To assess nurses' knowledge regarding job crafting, it consisted of 26 multiple-choice questions covering the definition of job crafting, core characteristics, importance, models, types, and strategies needed for being a job crafter.

**Scoring system:** The questions were scored as "one" for correct answers and "zero" for incorrect answers for each sheet. The total scores of all questions ranged from 0 to 26. The nurse's score was considered satisfactory knowledge if the score was more than 60% (20-26 points) and unsatisfactory knowledge if the score was equal to or less than 60% (less than 20).

**Tool II: Job Crafting Scale (JCS):** Developed by Petrou et al. (2012) to measure the level of nurses' job crafting behaviors. It consists of 13 items and is grouped under three dimensions: seeking resources (6 items), seeking challenges (3 items), and reducing demands (4 items).

**Scoring system:** Nurses' responses were measured on a five-point Likert scale ranging from always (5) to never (1). A nurse's score was classified as indicating a high level of job crafting behavior if it exceeded 75%, a moderate level if it was between 50% and 75%, and a low level if it was below 50%. The tool's reliability was determined by calculating its internal consistency using the Cronbach alpha coefficient, which was 0.919.

**Tool III: General Job crafting skills checklist:** It was developed by researchers based on the Michigan Job Crafting Exercise (JCE; Berg et al., 2008), which included job analysis, personal analysis, and job-personal analysis and was operationalized according to the JD-R model. It aims to train the participants in maximizing their job resources, optimizing the increased job demands, and adapting to new job challenges.

**Scoring system:** Nurses' general skills responses were measured on two scales: "0 = not done" and "1 = done." The total scores of all questions were 20. The total score was calculated and converted into a percent score by dividing the nurse's total score by the maximum possible score

and then multiplying by 100%. A summated score of the 20 items of the overall nurses' general skills ranges from 0 to 20. If the score was less than 50%, it was considered poor, and if the score was more than 50%, it was considered good.

**Tool (IV): Career Competencies Questionnaire (CCQ)** This tool was developed by Akkermans et al. (2013) to assess nurses' career competencies levels. It consists of 21 items. These items were grouped under six categories, namely networking (4 items), work exploration (3 items), reflection on motivation (3 items), reflection on qualities (4 items), career control (4 items), and self-profiling (3 items).

**Scoring system:** Nurses' responses were measured on a five-point Likert scale ranging from strongly agree (5) to strongly disagree (1). All items are summed up, and a mean score is calculated. Study subjects had low career competencies if the total score was less than 50%. While it was considered moderate level if the score was from 50% to 75%, and it was considered high level if the total score was more than 75%, internal consistency was measured by Cronbach's alpha. The alpha coefficient for the overall 21 items was 0.949.

#### **Validity of the tools:**

The modified tools were tested for content and face validity by a panel of five experts (two professors and three assistant professors) from the Nursing Administration Department, Faculty of Nursing, Zagazig University. The face and content validity assessment form comprised two parts; the first part captured experts' judgments for each item using a two-point scale (relevant or not relevant). The second part addressed the experts' overall opinions regarding the tools, including clarity, applicability, comprehensiveness, ease of understanding, feasibility of implementation, and any suggested additions or omissions. Based on their feedback, all recommended modifications were implemented by the researcher.

**Pilot study:** A pilot study was conducted after tool validation and before the commencement of actual data collection to assess clarity, feasibility, and applicability of the study tools and to identify potential obstacles. The pilot sample included 32 nurses (10% of the total study sample) selected from the study setting. Each participant received a copy of the study tools along with a brief explanation of the study purpose. The average time required to complete the tools ranged from 20 to 30 minutes. Nurses included in the pilot study were included in the main study sample.

#### **Job crafting intervention program (Field work):**

Fieldwork was conducted over six months, from mid-August 2023 to the end of January 2024, at Zagazig University Hospitals. The intervention program was implemented for the study group in clinical areas through 15 sessions totalling 23 hours (7 hours theoretical and 16 hours practical). Because it was not feasible to train all nurses simultaneously, participants were divided into smaller groups, and sessions were repeated until 155 nurses completed the full program.

The program consisted of two parts. The theoretical component covered key concepts of job crafting, including definitions, differences from traditional job design, purposes and motivations, importance of being a job crafter, core characteristics, models (e.g., Job Identity Model, Job Demands–Resources Model), and forms of job crafting (task, relational, and cognitive). It also addressed job resources, demands, challenges in nursing careers, and strategies such as seeking resources, seeking challenges, reducing demands, and developing a personal crafting plan.

The second part is practical in the form of giving activities and exercises for nurses who provide direct patient care in their clinical units. Nurses in each group are asked to read instructions for each activity. The researcher assigned a group leader randomly to assist in distributing roles to nurses in each group, and then nurses played their roles according to the situation; nurses played roles by rotation to learn how to deal according to the assigned role.

At the end of each session, the researcher evaluated the completion of the Michigan job crafting exercise using an observational checklist. Participants were expected to determine resources that could be increased, demands that could be reduced without disrupting work, and areas that were challenging for them. The researcher utilized group discussion to develop their own "Personal Crafting Plan" and to gain feedback. The program was given on four days per week for each group for about twenty-three weeks. The researcher used various teaching methods to attract nurses' attention and motivate them to participate, such as lectures, group discussion, brainstorming, role-play, and situations. The teaching media included PowerPoint, a whiteboard, and a copy of the program, which covered theoretical and practical information about job crafting.

#### **Ethical Considerations:**

The study was approved by the Ethics Research Committee at the Faculty of Nursing, Zagazig University. The verbal explanation of the nature, purpose, and benefits of the study was performed by the researcher to nurses included in the study sample. In addition, oral and written consent was obtained from each participant prior to inclusion in the study. Confidentiality of the subjects was also assured through coding of all data. The researcher assured participants that the participation is absolutely voluntary, and they can withdraw at any stage of the research without giving any reason. The collected data and information were confidential and were used only for the purpose of the study.

## Statistical analysis

All data were collected, tabulated, and statistically analyzed using SPSS 24.0 for Windows (SPSS Inc., Chicago, IL, USA, 2011). Quantitative data were expressed as the mean  $\pm$  SD & median (range), and qualitative data were expressed as absolute frequencies (number) & relative frequencies (percentage). A paired test was used to compare between paired variables of normal distribution. Repeated measure ANOVA was used to compare multiple paired variables of normal distribution. The percent of categorical variables was compared using the chi-square test or Fisher's exact test. Pearson's correlation coefficient was calculated to assess the relationship between various study variables; (+) a positive sign indicates direct correlation & (-) a negative sign indicates inverse correlation. Also, values near 1 indicate strong correlation, & values near 0 indicate weak correlation. All tests were two-sided. A p-value  $< 0.05$  was considered statistically significant (S), and a p-value  $\geq 0.05$  was considered statistically insignificant (NS).

## Results

**Table 1** shows personal data of nurses, it is clear from the table that 43.6% of study group nurses were aged 30 to less than 40, while 35.5% of control group nurses were aged 20 to less than 30. The majority of nurses in both groups were females, married, worked 8 hours, and employed in Emergency Hospital, New Surgical Hospital, and Internal Medicine Hospital. Educationally, 43.9% of study group nurses had a Technical Nursing Institute qualification compared to 40.0% in the control group who held a nursing diploma. About 51.0% of study group nurses worked in critical care units, and 32.9% had 5 to 10 years of experience, with nearly all nurses from both groups not having undergone job crafting training.

**Figure 1** illustrates that the majority of nurses demonstrated unsatisfactory level of knowledge regarding job crafting in the pretest in both the study and control groups (57% and 74%, respectively). In contrast, in the post-test approximately 70% of nurses in the study group achieved a satisfactory level of knowledge, compared to 52% in the control group. Moreover, three months later the proportion of nurses in the study group with satisfactory knowledge increased to 76%, indicating a sustained improvement. These findings suggest that the program was effective in enhancing nurses' knowledge of job crafting behaviors. Consequently, Hypothesis One was supported.

**Figure 2** illustrates that the highest percentage of nurses had a low level of job crafting behaviors in both the study and control groups before the program implementation (57.4% & 42.6%, respectively). After the program implementation, 40.6% of nurses in the study group had high levels of job crafting behaviors compared to 3.9% in the control group. Additionally, three months after the program implementation, 41.3% of nurses in the study group had a high level of job crafting behaviors. This suggests that the program was effective in improving the nurses' job crafting behaviors.

**Figure 3** shows that 94.2% of nurses in the study group had a poor level regarding general job crafting skills before program implementation compared to 83.2% of nurses who had a good level after program implementation.

**Figure 4** illustrates that the highest percentage of nurses had low levels of career competencies in both the study and control groups before the program implementation (60.6% & 40.0%, respectively). After the program implementation, 44.5% of nurses in the study group had high levels of career competencies compared to 5.2% in the control group. In addition, three months after program implementation, more than half (51.0%) of nurses in the study group had high levels of career competencies. Hypothesis two was accepted.

**Table (2)** concludes that career competencies dimensions increased in the study group throughout program phases, with a highly statistically significant difference in both the pre-post and pre-follow-up phases of the program (p-value = 0.000). On the other hand, there was no statistically significant difference before taking the test for the control group, while a statistically significant difference appeared after taking the test regarding their career competencies dimensions at P-value= (0.000).

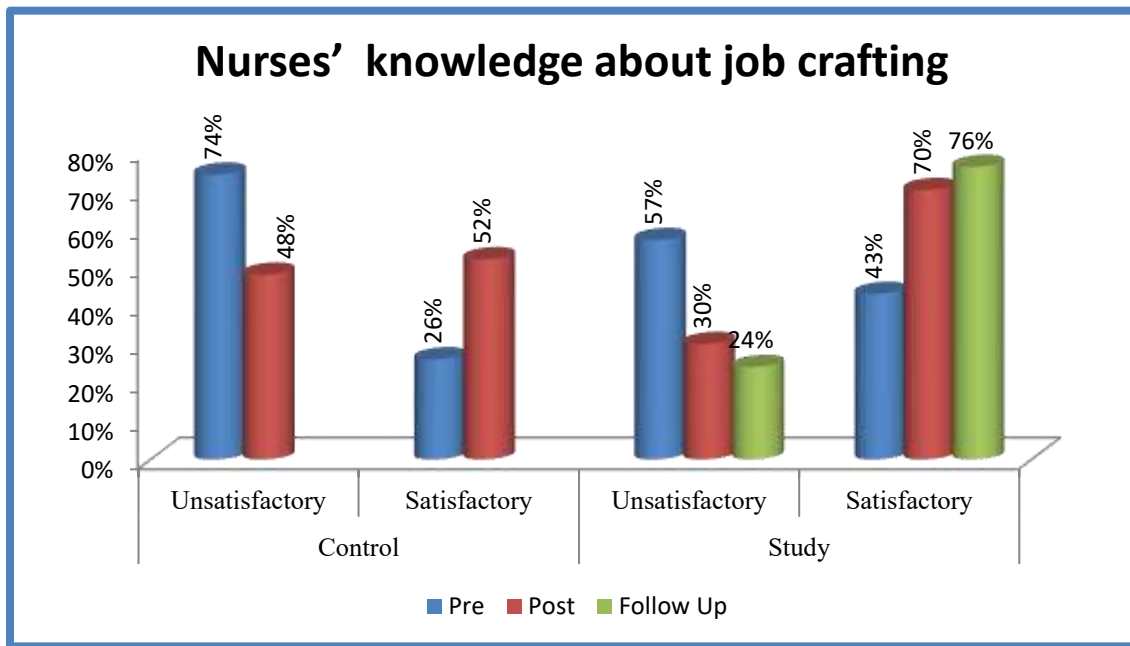
**Table (3)** portrays that there was a statistically significant correlation between nurses' job crafting behaviors level and their career competencies before, after, and three months after program implementation ( $r = 0.399, 0.356, \text{ and } 0.292$ , respectively) at a P-value of 0.000.

**Table (1):** Frequency distribution of nurses' personal data (n=310)

Personal data	Study group (n=155)		control group (n=155)		X <sup>2</sup>	p-value
	No	%	No	%		
<b>Age in years</b>						
20 to < 30 year	51	39.4	55	35.5	27.109	0.000*
30 to < 40 year	67	43.2	43	27.7		
40 to < 50 year	27	17.4	37	23.9		
≥ 50	0	0.0	20	12.9		
<b>Mean±SD</b>	<b>1.7806±0.7232</b>		<b>2.1419±1.0472</b>			
<b>Gender</b>						
Male	33	21.3	32	20.6	0.019	1.000
Female	122	78.7	123	79.4		
<b>Marital Status</b>						
Single	22	14.2	33	21.3	8.134	0.043*
Married	128	82.6	113	72.9		
Widow	2	1.3	0	0.0		
Divorced	3	1.9	9	5.8		
<b>Mean/SD</b>	<b>1.9097±0.4749</b>		<b>1.9032±0.6623</b>			
<b>Work hours/day</b>						
8 hours	106	68.4	113	72.9	0.762	0.454
12 hours	49	31.6	42	27.1		
<b>Mean/SD</b>	<b>1.3161±0.4665</b>		<b>1.2710±0.4459</b>			
<b>Working units</b>						
Critical care unit	79	51.0	71	45.8	0.827	0.213
Un-critical unit	76	49.0	84	54.2		
<b>Mean/SD</b>	<b>1.4903±0.5015</b>		<b>1.5419±0.4999</b>			
<b>Educational qualification</b>						
Nursing Diploma	53	34.2	62	40.0	14.728	0.002*
Technical Nursing Institute	68	43.9	42	27.1		
Bachelor of Nursing	31	20.0	51	32.9		
Master's	3	1.9	0	0.0		
<b>Mean/SD</b>	<b>1.8968±0.7827</b>		<b>1.9290±0.8536</b>			
<b>Years of Experience</b>						
6months to ≤ 5 years	29	18.7	28	18.1	4.205	0.240
5 to < 10 years	51	32.9	38	24.5		
10 to < 20 years	33	21.3	32	20.6		
≥20 years	42	27.1	57	36.8		
<b>Mean/SD</b>	<b>2.5677±1.0812</b>		<b>2.7613±1.1344</b>			
<b>Attend training program about job crafting</b>						
Yes	0	0.0	0	0.0	1.003	0.500
No	155	100.0	155	100.0		
<b>Mean/SD</b>	<b>2.000±0.0000</b>		<b>1.9935±0.0803</b>			
<b>Hospital name</b>						
Cardiac and Chest Hospital	21	13.5	21	13.5	0.000	1.000
The Pediatric Hospital	17	11.0	17	11.0		
El-Salam Hospital	10	6.5	10	6.5		
Delivery and Premature Hospital	13	8.4	13	8.4		
New-Surgical Hospital	33	21.3	33	21.3		
Internal-Medicine Hospital	31	20.0	31	20.0		
Emergency Hospital	30	19.4	30	19.4		
<b>Mean/SD</b>	<b>4.5032±2.0619</b>		<b>4.5032±2.0619</b>			

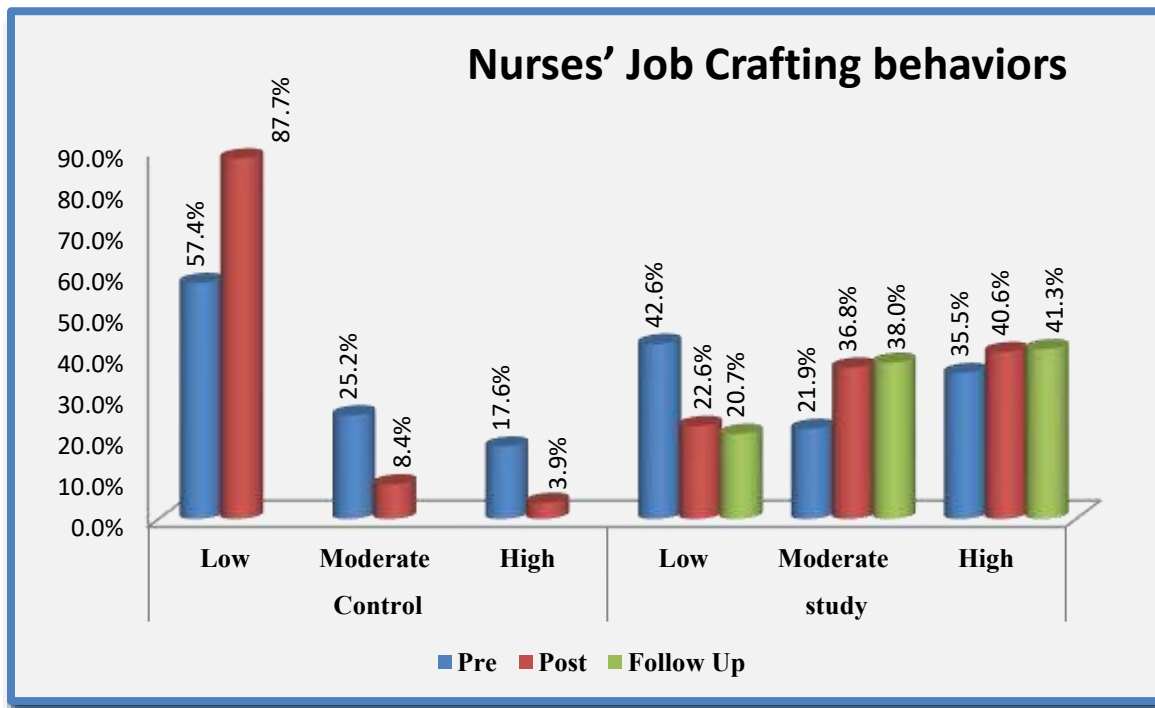
\*P<0.05= Significant

X<sup>2</sup> Chi Square Test



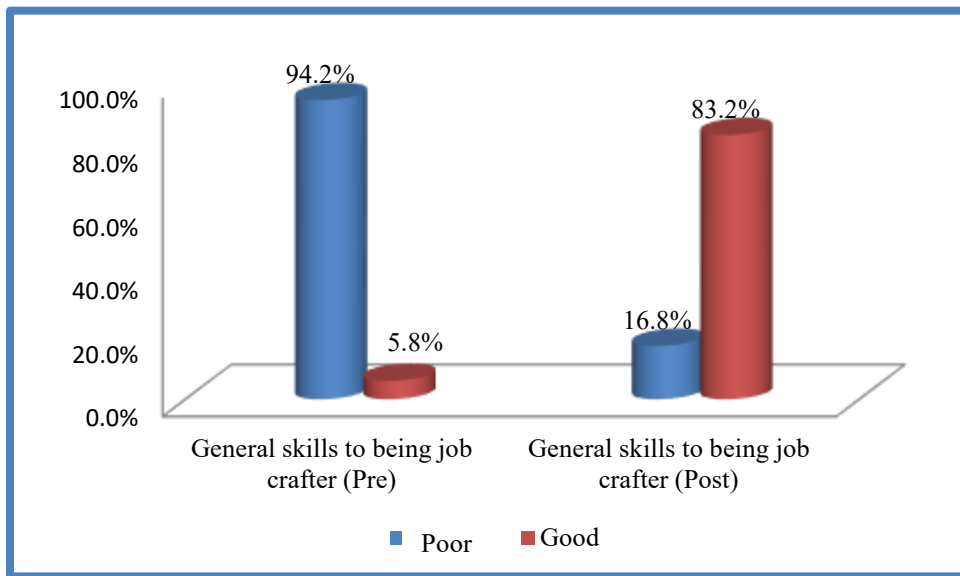
Satisfactory = >60 % Unsatisfactory = ≤60%

**Figure (1):** Total level of knowledge about job crafting throughout the program phases among studied nurses (n=310).



Low < 50%, Moderate 50% > to < 75%, High > 75%.

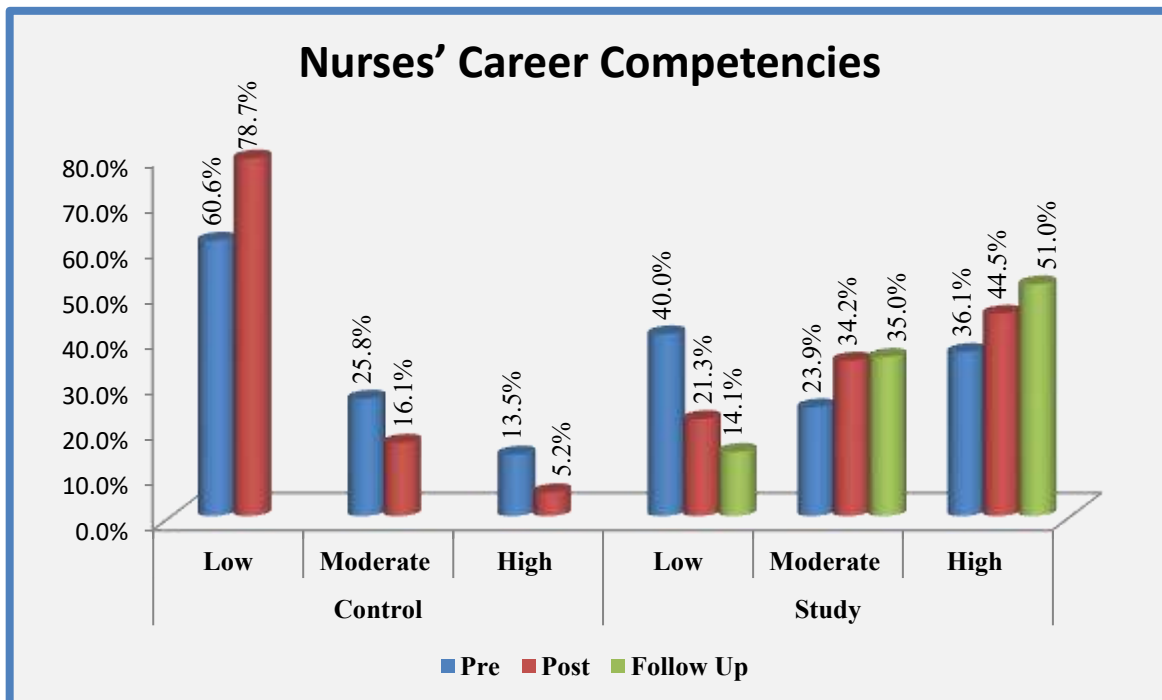
**Figure (2):** Total level of job crafting behaviours among nurses throughout the program phases in the study and control groups (n= 310).



Good: > 50%

Poor: <50%

Figure (3) Levels of general job crafting skills that nurses used to craft their job in the study group (n=155)



Low <50%, Moderate 50% > to <75%, High > 75%.

Figure (4): Total level of nurses' career competencies throughout the program phases in the study and control groups (n= 310)

**Table (2):** Nurses' career competencies dimensions throughout the program phases in the study and control groups (n= 310)

Nurses' career competencies dimensions	Time	Study group (n=155)	Control group (n=155)	P-value
		Mean ± SD	Mean ± SD	
Networking	Pre	3.8823±0.684	3.6484±0.719	<b>0.004</b>
	Post	4.4032±0.392	3.5823±0.712	<b>0.000</b>
	Follow up	4.6339±0.204		
P-value	Pre - Post	<b>0.000</b>	<b>0.226</b>	
	Pre-Follow	<b>0.000</b>		
Work exploration	Pre	3.7914±0.864	3.6667±0.756	<b>0.177</b>
	Post	4.3290±0.494	3.5785±0.770	<b>0.000</b>
	Follow up	4.5978±0.278		
P-value	Pre - Post	<b>0.000</b>	<b>0.162</b>	
	Pre-Follow	<b>0.000</b>		
Reflection on motivation	Pre	3.9097±0.854	3.6215±0.727	<b>0.002</b>
	Post	4.3677±0.501	3.5183±0.777	<b>0.000</b>
	Follow up	4.5978±0.268		
P-value	Pre - Post	<b>0.000</b>	<b>0.082</b>	
	Pre-Follow	<b>0.000</b>		
Reflection on qualities	Pre	4.000±0.722	3.7161±0.709	<b>0.001</b>
	Post	4.000±0.409	3.6226±0.698	<b>0.000</b>
	Follow up	4.5742±0.250		
P-value	Pre - Post	<b>0.000</b>	0.078	<b>0.001</b>
	Pre-Follow	<b>0.000</b>		
Career control	Pre	3.7452±0.782	3.4758±0.751	<b>0.002</b>
	Post	4.2597±0.473	3.3694±0.727	<b>0.000</b>
	Follow up	4.4242±0.305		
P-value	Pre - Post	<b>0.000</b>	0.061	<b>0.000</b>
	Pre-Follow	<b>0.000</b>		
Self-profiling	Pre	3.7957±0.936	3.4000±0.796	<b>0.000</b>
	Post	4.2710±0.540	3.2839±0.807	<b>0.000</b>
	Follow up	4.4065±0.37078		
P-value	Pre - Post	<b>0.000</b>	0.082	
	Pre-Follow	<b>0.000</b>		

\*p<0.05= significant.

**Table (3):** Correlation between nurses' knowledge, Job Crafting behaviors, and Career competencies throughout the program phases in the study group (n=155)

Variables	Time	Career competencies	
		r	P-value
Total Knowledge	Pre	0.011	0.890
	post	0.136	0.092
	Follow up	0.034	0.676
Job Crafting Behavior	Pre	0.399	0.000*
	post	0.356	0.000*
	Follow up	0.292	0.000*

(r): Correlation coefficient p>0.05: no significant, \* p<0.05: significant

## Discussion

Job crafting represents a positive and proactive behavior through which nurses reinterpret their roles based on their abilities and preferences, enabling them to restructure their tasks in alignment with their competencies. Nurses who effectively engage in job crafting tend to develop a stronger professional identity, enhancing their sense of purpose and commitment to improving patient outcomes.

The findings of the present study demonstrated a significant improvement in nurses' knowledge of job crafting across program phases, with highly statistically significant differences observed between pre–post and pre–follow-up measurements. Moreover, significant differences were identified between the study and control groups in favor of the study group immediately after the intervention and at the three-month follow-up. These findings support the first hypothesis, indicating that job crafting knowledge can be effectively enhanced through structured intervention programs.

These results are consistent with previous studies, including **El-Gazar et al. (2023)**, and **Hamouda & Farghaly (2020)**, which reported improved knowledge levels following job crafting interventions. Similarly, **Van Leeuwen et al. (2021)** highlighted the positive impact of career crafting training on job crafting behaviors and self-management. While **Teng (2019)**, indicated that professionals from other sectors had a better understanding of job crafting because of previous training. This implies that the nurses involved in the current study had limited prior exposure to the concept, resulting in their lower baseline knowledge. Regarding job crafting behaviors, the present study revealed significant improvements across different phases of the

program, confirming the effectiveness of the intervention in enhancing nurses' ability to actively shape their work experiences. This finding aligns with (van Wingerden, Bakker, & Derks, 2017; Sakuraya et al., 2016), who emphasized that job crafting behaviors can be developed through targeted interventions.

The research findings corroborate earlier studies demonstrating the effectiveness of job crafting interventions in enhancing job crafting behaviors. Notably, work by Van Leeuwen et al. (2021) and Kassem and Ibrahim (2022) reported significant long-term improvements in job crafting and career self-management among participants. Additionally, studies by Alharthi et al. (2023) and El-Gazar et al. (2023) found that nurses involved in structured job crafting programs exhibited increased job crafting behaviors both immediately post-intervention and in follow-up assessments. These observations underline the significance of systematic and phased training programs in fostering and maintaining behavioral change.

In contrast, the current study's outcomes diverge from those of Sakuraya et al. (2020) and Kuijpers et al. (2020), who found minimal or non-significant gains following similar interventions. Such disparities may stem from differences in organizational contexts, participant demographics, or intervention designs, indicating that the effectiveness of job crafting interventions is influenced by various contextual and environmental factors.

With respect to general job crafting skills, the study found a significant improvement in job crafting skills among nurses after participating in a structured training program, confirming the effectiveness of the intervention. This enhancement is linked to the interactive nature of the program, which included practical strategies and opportunities for nurses to develop essential skills such as job analysis and personal crafting plans. This continuous practice aided in skill acquisition and integration into daily clinical practice.

These findings indicate a nuanced understanding of job crafting interventions, supported by prior research. El-Gazar et al. (2023) noted that such interventions promoted resource-seeking behaviors and mitigated job demands over time. Similarly, Topa and Aranda-Carmena (2022) observed high levels of engagement in job crafting among nurses participating in structured programs. Demerouti et al. (2021) also highlighted that these interventions facilitate employee adaptation to organizational changes while fostering positive work attitudes. Additionally, Van Leeuwen et al. (2021) found that training improved awareness of job crafting behaviors and the effective use of job resources, while Oprea et al. (2019) confirmed beneficial outcomes across various dimensions of job crafting.

However, not all studies align with these positive results. Van den Heuvel et al. (2015) reported no significant improvements in job crafting dimensions following their intervention, and Gordon et al. (2018) noted that while improvements in seeking resources and reducing demands were evident, enhancement in seeking challenges was not statistically significant. The inconsistencies observed may arise from differences in program design, duration, sample characteristics, or the organizational context, which can all affect the success of job crafting interventions.

The current study revealed a significant improvement in nurses' career competencies levels within the study group across the different phases of the program, with highly statistically significant differences observed between pre-post and pre-follow-up measurements. This finding supports the second hypothesis and highlights the effectiveness of the intervention. The structured nature of the program—emphasizing reflection, goal-setting, and practical application of job crafting strategies—appears to have enhanced nurses' skills, confidence, and ability to proactively manage and advance their careers.

These findings are consistent with Bahmani et al. (2016) indicated that job crafting enables employees to modify or minimize undesirable tasks, allowing better alignment between individual abilities and job demands, which in turn supports the development of career competencies. Similarly, Van Wingerden et al. (2017) found that employees engaged in job crafting tend to expand their structural job resources, such as seeking learning opportunities and autonomy, thereby fostering an environment conducive to competency development. Furthermore, Bakker (2018) emphasized that healthcare professionals who actively engage in job crafting optimize their performance and professional growth. Achieving challenging goals and redefining work roles can enhance nurses' competencies by improving how they approach tasks, collaborate with others, and perceive the meaning and value of their work.

Finally, the present study demonstrated a statistically significant positive correlation between nurses' job crafting and their career competencies across all measurement phases (pre, post, and follow-up). This indicates that nurses who actively engage in job crafting behaviours are more likely to experience enhanced career competencies, including greater self-awareness, adaptability, and career development capacity. Such individuals tend to create more meaningful work experiences and access

broader opportunities for professional growth.

These findings are consistent with prior research. Studies by **Akkermans et al. (2013b)** and **Akkermans and Tims (2017)** highlighted that individuals with higher career competencies are more inclined to engage in job crafting behaviours. Similarly, **Elbanawey (2018)** found a significant positive relationship between career competencies and job crafting among academicians, emphasizing the role of personal and contextual factors in fostering proactive work behaviours. In addition, **Elsayed (2019)** and **Wardani et al. (2021)** reported similar results, confirming a positive association between job crafting and career competencies among nurses and other working populations.

Overall, these consistent findings suggest that career competencies and job crafting are mutually reinforcing constructs. Enhancing one is likely to support the development of the other, underscoring the importance of integrating job crafting strategies into professional development programs to promote sustained career growth and improved work outcomes.

### **Conclusion**

Based on the study findings about the effect of the job crafting intervention program on the job crafting behaviour and career competencies of nurses, it was concluded that the training program for nurses was effective and improved their level of job crafting knowledge and skills. Furthermore, the career competency level of nurses improved. Additionally, there was a statistically significant positive correlation between nurses' job crafting behaviour and their career competencies. The hypothesis of the current study was achieved.

**Recommendation:** Based on the findings of this study, the nurse's leaders and manager's need to:

- Demonstrate a strong orientation toward job crafting and its strategies, which is clearly communicated and enacted, from the highest levels of management, throughout the hospital.
- Foster and normalize the practice of job crafting by acknowledging it as a constructive and beneficial approach that enhances individual performance and strengthens overall organizational effectiveness.
- Establish and sustain a safe, supportive, and professionally enriching work environment that nurtures competence, encourages autonomy, and facilitates high-quality nursing practice.
- Regularly assess nurses' core competency levels to identify areas for improvement and ensure on-going professional development.
- Incorporate structured job crafting training within leadership development programs for nurse managers, thereby equipping leaders with innovative strategies to motivate their teams and reinforce job crafting behaviors among nursing personnel.

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The authors confirmed that there is no any conflict of interest.

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